

Patent
09/703,020

REMARKS

Claims 1-15 and 17-41 are pending in the application and Claims 1, 17, 27 and 40 are independent. Claims 1 and 17 have been amended. Claims 1-15 and 17-41 were rejected under 35 USC 103(a) as being unpatentable over US Patent 5,886,701 (Chauvin) in view of US Patent 6,239,807 (Bossut). This rejection is traversed and reconsideration is respectfully requested.

Independent Claim 1 is directed to a system for managing texture data, including a texture memory controller coupled to a texturing engine and a texture memory coupled to the texture memory controller. The texture memory is configured to store texture data in a texture map set, the texture map set comprising two or more texture layers. The texture memory controller is configured to access one or more packets from the texture memory and pass the packets to the texturing engine, each packet comprising texture data from at least two texture layers. - - While Applicants believe that Claims 1 and 17 as previously pending were patentable over the combined teachings of Chauvin and Bossut, in order to eliminate any issues, and to even further define over the teachings of Chauvin and Bossut, each of independent Claims 1 and 17 has now been amended to further recite that *a unique texel offset is applied between the at least two texture layers, such that texels from different texel locations in each of said at least two texture layers are blended.*

Applicant's system and method, as defined by each of amended independent Claims 1 and 17, allow the texturing engine to render surfaces that have an apparent thickness where the upper layers are partially transparent and sub-surface details show through the upper layers. With regard to independent Claims 1 and 17, the Office Action acknowledges that "Chauvin does not teach data is in a form of packet having at least two or more layers", but takes the position that "Bossut teaches texture data including two layers having loading capability corresponding to a packet including two layers...[and that] it would have been obvious...to incorporate the texture layers of Bossut into the texture engine of Chauvin because the combination of texture layers of Bossut and texture engine of Chauvin would provide the multi resolution texture mapping for an object".

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Applicants respectfully direct the Examiner to Exhibit A (attached hereto and provided for illustrative purposes only). As shown in Exhibit A, in the cited art, the texels chosen for blending are the same for *all texture layers, regardless of the viewing angle*. However, as defined by amended independent Claims 1 and 17 herein, the texels chosen for blending are from different texel locations for each texture layer based on a unique offset based on a change in viewing angle. The difference in distance between the texture layers causes the texels chosen for blending to change (i.e., it is *not* the 'same' texel value in each texture layer, as in the cited art).

It is for this reason that each of independent Claims 27 and 40 is also believed patentable over the teachings of Chauvin and Bossut.

Independent Claim 27 is directed to a method of surface depth texturing comprising the steps of determining a depth stepping angle, the depth stepping angle formed by a first vector from an eye point position to a fragment in a polygon surface and a second vector normal to the surface of the fragment, converting the depth stepping angle to one or more texel offset values, applying the texel offset values to a first texel in a first texture layer to find a corresponding second texel in a second texture layer, blending one or more color values and one or more alpha values associated with the first and second texels to create an apparent surface depth for the fragment and applying the blended color values and alpha values to the fragment.

Independent Claim 40, directed to a surface-depth texturing system, recites similar limitations to those recited in Claim 27 and the arguments herein are therefore believed applicable to independent Claim 40 as well.

The Office Action (para. 18) states that Chauvin teaches....“converting the depth stepping angle to one or more texel offset values; [and] applying the texel offset values to a first texel in the first texture layer to find a corresponding second texel in a second texture layer” – and directs Applicants to “col. 54, lines 31-47”. Applicants cannot find any teaching of these recited steps within this section of Chauvin, or within Chauvin and Bossut at all. Should this rejection be maintained in the next communication, clarification and a more detailed explanation of these alleged teachings within the prior art are respectfully requested.

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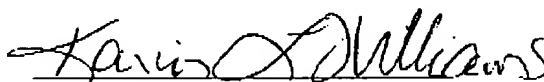
Finally, Applicants respectfully submit that it would not be 'obvious' to one of ordinary skill in the art to combine even the *alleged* teachings of Chauvin and Bossut in the manner suggested in the Action, in the absence of Applicants' very own teachings, since Chauvin requires multiple iterations throughout the rendering pipeline to combine texture information, and cannot provide parallax texture information.

For at least the foregoing reasons, Applicant respectfully submits that the cited references fail to even teach or suggest the elements recited in each of independent Claims 1, 17, 27 and 40, and that each of the independent claims are therefore patentable over the combined teachings of Chauvin and Bossut.

Dependent Claims 2-15, 18-26, 28-39 and 41 are believed to be clearly patentable for all of the reasons indicated above with respect to Claims 1, 17, 27 and 40, one or another from which they depend, and even further distinguish over the cited references by reciting additional limitations. Individual reconsideration of each of the dependent claims is also respectfully requested.

It is respectfully submitted that in regard to the above amendment and remarks that the pending application is patentable over the art of record and reconsideration is accordingly requested. Should the Examiner be of the view that an interview would expedite consideration of this Amendment or of the application at large, request is kindly made that the Examiner telephone the Applicant's undersigned attorney at (908) 518-7700 in order that any outstanding issues may be resolved.

Respectfully submitted,



Karin L. Williams

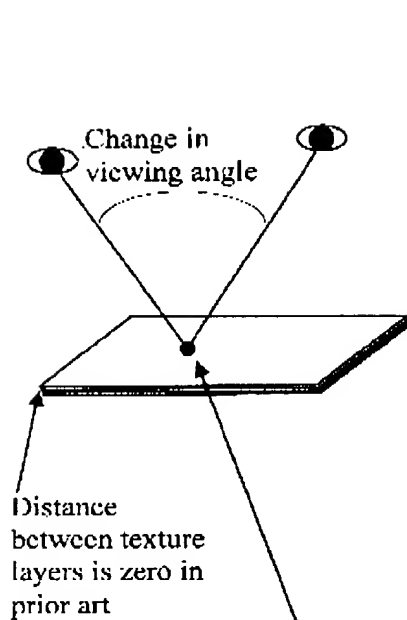
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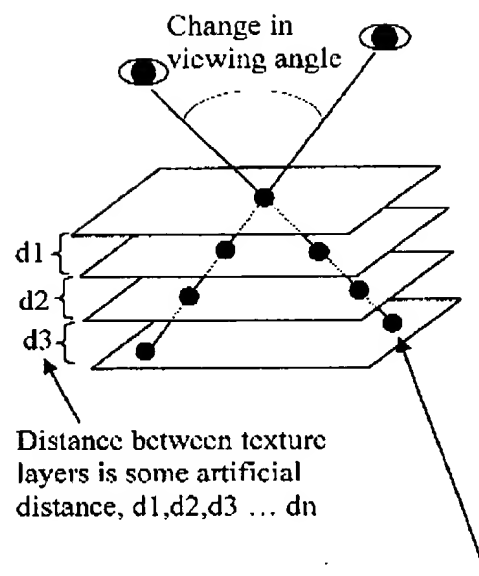
Mayer & Williams PC
251 North Avenue West, Second Floor
Westfield NJ 07090

(908) 518-7700
(908) 518-7795 fax



In prior art, texels chosen for blending are the same for all texture layers regardless of the viewing angle

Bossut



texels chosen for blending change due to the change of the viewing angle

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Exhibit A